

**REMARKS**

These amendments and remarks are being filed in response to the Office Action dated January 8, 2004. For the following reasons this application should be allowed and the case passed to issue.

No new matter is introduced by this amendment. The amendments to claims 1 and 29 are supported by the specification at paragraphs 050 and 051, which clearly discloses that the second protection device or means does not return the drained water to the fuel cell while protecting the fuel cell.

Claims 1-53 are pending in this application. Claims 1-6, 8, 17, and 29 are rejected. Claims 1 and 29 have been amended. Claims 7, 9-16, 18-28, and 30-53 are withdrawn.

***Restriction***

Regarding the election of species requirement, Applicants note that the Examiner's determination that "[c]urrently, no claim is generic" is incorrect (page 3, of restriction requirement). Independent claims are generic to claims that depend therefrom. Therefore, independent claim 1 is generic to dependent claims 2-27.

As the two groups of restricted claims are drawn to a product and process, and Applicants have elected the product, Applicants request rejoinder of the process claims upon the allowance of a product claim, pursuant to MPEP § 821.04.

***Claim Rejections Under 35 U.S.C. § 102***

Claims 1-6, 8, 17, and 29 was rejected under 35 U.S.C. 102(e) as being anticipated by Bonville (U.S. Patent No. 6,248,462). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the instant invention as claimed, and the cited prior art.

An aspect of the present invention, per claim 1, is a fuel cell system comprising a fuel cell having a water passage and a passage for gas required to generate power. The fuel cell system also includes a first protection device which prevents freezing of water in the fuel cell by maintaining the temperature of the fuel cell and a second protection device which prevents freezing of water in the fuel cell by draining water in the fuel cell. The second protection device does not return the drained water to the fuel cell while protecting the fuel cell. In addition the fuel cell system comprises a controller functioning to select one of the first protection device and second protection device as the protection device to be used when the fuel cell has stopped, and protect the fuel cell by operating the selected protection device when the fuel cell has stopped.

An aspect of the present invention, per claim 29, is a fuel cell system comprising a fuel cell having a water passage and a passage for gas required to generate power. The fuel cell system also includes a first protection means which prevents freezing of water in the fuel cell by maintaining the temperature of the fuel cell and a second protection means which prevents freezing of water in the fuel cell by draining water in the fuel cell. The second protection means does not return the drained water to the fuel cell while protecting the fuel cell. In addition the fuel cell system comprises means which selects one of the first protection means and second protection means as the protection means to be used when the fuel cell has stopped.

The Examiner asserted that Bonville discloses an apparatus for thermal management of a fuel cell assembly with a plurality of thermal management loops in contact with the fuel cell assembly and a heat exchanger. A controller 45 controls the thermal management loops and regulates the heat exchanger and a pump. The system further comprises temperature sensors. A coolant circulates through a cool flow channel. The Examiner further asserted that the thermal

management loop supplies coolant water to the fuel cell stack and exhausts the heated coolant from the fuel cell stack.

Bonville, however, does not anticipate the claimed fuel cell system because Bonville does not disclose first and second protection devices or means which prevent freezing of water in the fuel cell. Bonville discloses primary and secondary thermal management loops. The primary thermal management loop of Bonville does not prevent freezing of the fuel cell stack. Bonville's primary thermal management loop circulates coolant so that heat generated in the fuel cell stack is absorbed. Bonville's primary thermal management loop **cools** the fuel cell stack, rather than prevents freezing, as required by claims 1 and 29. A thermal management loop that **cools** the fuel cell stack clearly would not prevent freezing of water in the fuel cell stack, as required by claims 1 and 29. Thus, Bonville does not disclose first and second protection devices or means which prevent freezing of water in the fuel cell, as required by claims 1 and 29.

The claimed fuel cell system is further distinguishable over Bonville, because Bonville does not disclose a second protection device or means which prevents freezing of water in the fuel cell by draining water in the fuel cell and not returning the drained water to the fuel cell while protecting the fuel cell, as required by claims 1 and 29. Bonville discloses **immediately returning** water that is exhausted from the fuel cell stack back through the fuel cell stack after the water passes through the heat exchangers 35 and 36. Thus, the asserted second protection device or means of Bonville **returns** water to the fuel cell stack while protecting the fuel cell stack, unlike the second protection device or means, as required by claims 1 and 29.

The factual determination of lack of novelty under 35 U.S.C. § 102 requires the disclosure in a single reference of each element of a claimed invention. *Helifix Ltd. v. Blok-Lok Ltd.*, 208 F.3d 1339, 54 USPQ2d 1299 (Fed. Cir. 2000); *Electro Medical Systems S.A. v. Cooper*

*Life Sciences, Inc.*, 34 F.3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994); *Hoover Group, Inc. v. Custom Metalcraft, Inc.*, 66 F.3d 399, 36 USPQ2d 1101 (Fed. Cir. 1995); *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). Because Bonville does not disclose first and second protection devices or means that prevent water from freezing in the fuel cell, and does not disclose a second protection device or means that does not return drained water to the fuel cell while protecting the fuel cell, Bonville does not anticipate claims 1 and 29.

Applicants further submit that Bonville does not suggest the claimed fuel cell system.

Dependent claims 2-6, 8, and 17 are allowable for at least the same reasons as independent claim 1 and further distinguish the claimed fuel cell system.

In view of the above remarks, Applicants submit that this application should be allowed and the case should be passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

**10/083,606**

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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